CLASS SPECIFICATION

TITLE	GRADE	EEO-4	CODE
ENGINEERING DRAFTER III	**31**	**C**	**6.370**
ENGINEERING DRAFTER II	**28**	**C**	**6.371**
ENGINEERING DRAFTER I	**25**	**C**	**6.377**

SERIES CONCEPT

Engineering Drafters develop preliminary and final working drawings from engineering sketches and design notes or from verbal direction received from design engineers, utilizing computer aided drafting design (CADD) software and accepted drafting techniques to create plans used by engineers and contractors in highway construction projects.

Determine the amount of detail to be shown on the drawing, the need to enlarge sections for clarity, individual components such as dimensions, text, legend, symbology, and placement of components on the drawing; resolve discrepancies such as difference in elevation between roadway and bridge design by meeting with design engineers.

Develop drawings for roadway design to include title sheets and location sketches to show the location of a project with a specified section of a highway route; develop typical sections to show a cross-section of a highway to include elements such as the depth of the base and surfaces, road widths, location of curbs and gutters, and slope of ditches; plan and profile sheets for roadway alignment to show centerline and stations, edge of road, drainage pipes, guardrail, curb, gutter, and utilities.

Develop drawings for drainage features to include drainage plans, drainage profiles, erosion control plans, and special details; show relationship of drainage features such as storm drain systems, roadway and flat bottom ditches, drop inlets, culverts and appurtenances; coordinate the details with engineers from both roadway design and hydraulics to ensure adequate detail and compatibility with the design.

Develop drawings for bridge design to include cover sheets to lay out the limits of the bridge and show the type of bridge such as concrete, timber, or steel; develop geometric sheets to lay out the limits and location of the footings; develop abutment, wingwall, pier, deck, approach slab and barrier rail sheets to lay out limits of concrete and the location and size of reinforcement steel; lay out and modify special details for unique situations and bent bar sheets to show location of bends.

Develop drawings for traffic control to include traffic control sheets and construction staging which show traffic control devices and detours to divert traffic from construction work zones, as well as striping plan sheets to show precise location of striping lines for both temporary and permanent conditions.

Perform related duties as assigned

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CLASS CONCEPTS

Engineering Drafter III: Under direction, incumbents perform the full range of duties outlined in the series concept. This is the journey level in the series.

Engineering Drafter II: Under general supervision, incumbents continue to receive training in the performance of the duties outlined in the series concept and progression to the next level may occur upon meeting the minimum qualifications and with the recommendation of the appointing authority.

CLASS CONCEPTS (cont'd)

Engineering Drafter I: Under close supervision, incumbents receive training in the performance of all or part of the duties outlined in the series concept. This is the entry level in the series and progression to the next level may occur upon meeting the minimum qualifications and with the recommendation of the appointing authority.

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MINIMUM QUALIFICATIONS

SPECIAL NOTES AND REQUIREMENTS:

* Some positions require specialized experience which will be identified at the time of recruitment.
* Completion of a two-year program in CADD, drafting technology, engineering graphics, drafting or equivalent course work may be substituted for work experience up to a maximum of one year.

ENGINEERING DRAFTER III

EDUCATION AND EXPERIENCE: Graduation from high school or equivalent education and four years of experience preparing plans for an engineering, architect, or similar organization; **OR** two years of experience as an Engineering Drafter II in Nevada State service; **OR** an equivalent combination of education and experience. *(See Special Notes and Requirements)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Detailed knowledge of: drafting methods, nomenclature, conventional symbols, and equipment; drafting techniques; computer aided drafting design software. **Skill in:** identifying problems and reviewing related information to develop and evaluate solutions, conclusions or approaches to problems. **Ability to:** draft special detail sheets; apply various mathematical formulas utilizing the principles of algebra, geometry and trigonometry to make drafting calculations; read, interpret and translate field notes and design notes to legible and accurate drawings; lay out existing alignments; make independent decisions when developing detailed drawings including appropriate scales, line weights, necessary sections and enhancements needed to clarify drawings; read engineering plans; *and all knowledge, skills and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
Working knowledge of: agency policies and procedures. **Ability to:** draft complex special details with multiple components for roadway design; establish and maintain cooperative working relationships with design engineers.

ENGINEERING DRAFTER II

EDUCATION AND EXPERIENCE: Graduation from high school or equivalent education and two years of experience preparing plans for an engineering, architect, or similar organization; **OR** one year of experience as an Engineering Drafter I in Nevada State service; **OR** an equivalent combination of education and experience. *(See Special Notes and Requirements)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Working knowledge of: drafting methods, nomenclature, conventional symbols, and equipment; policies and procedures related to drafting; drafting techniques and procedures. **General knowledge of:** chart, graph and table formatting. **Ability to:** prepare drawings according to contract documents; interpret

MINIMUM QUALIFICATIONS (cont'd)

ENGINEERING DRAFTER II (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (cont'd)
plans, specifications, maps, charts, and diagrams; draft title sheets, location sketches, section of improvements, plan and profile sheets, and geometric sheets; choose the right mathematical methods or formulas to solve a problem. **Skill in:** analyzing needs and product requirements to create a design drawing; *and all knowledge, skills and abilities required at the lower level.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
(These are identical to the Entry Level Knowledge, Skills and Abilities required for Engineering Drafter III.)

ENGINEERING DRAFTER I

EDUCATION AND EXPERIENCE: Graduation from high school or equivalent education which must have included course work in geometry, CADD, and mechanical, civil or structural drawing/drafting; and six months of experience preparing plans for an engineering, architect, or similar organization; **OR** one year of experience preparing plans for an engineering, architect, or similar organization; **OR** an equivalent combination of education and experience. *(See Special Notes and Requirements)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):
Working knowledge of: algebra, geometry and trigonometry. **General knowledge of:** drafting methods, nomenclature, conventional symbols, and equipment; drafting techniques and procedures; personal computers and computer aided drafting design software. **Ability to:** establish and maintain cooperative working relationships to exchange ideas, information and opinions with co-workers and others to formulate drawings and sketches; prepare drawings using computers and CADD software; follow oral and written instructions; work with frequent interruptions; perform a variety of tasks often changing from one to another.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):
(These are identical to the Entry Level Knowledge, Skills and Abilities required for Engineering Drafter II.)

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

	6.370	6.371	6.377
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